Figure 1

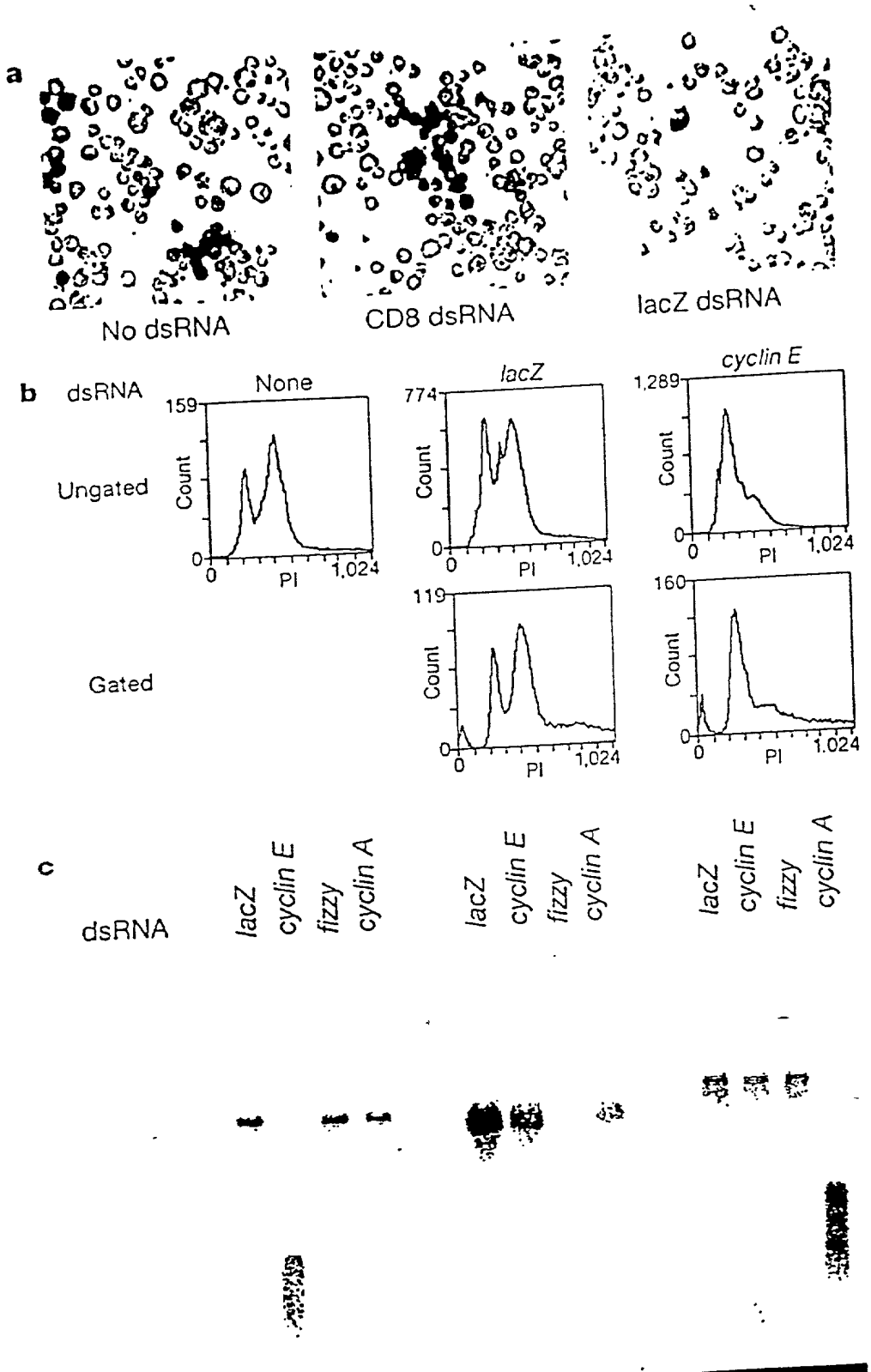

a
No dsRNA
CD8 dsRNA
lacZ dsRNA
b
dsRNA
None
lacZ
cyclin E
Ungated
Gated
Count
PI
159
774
1,289
119
160
0
1,024
c
dsRNA
lacZ
cyclin E
fizzy
cyclin A
Probe
cyclin E
fizzy
cyclin A

Figure 2

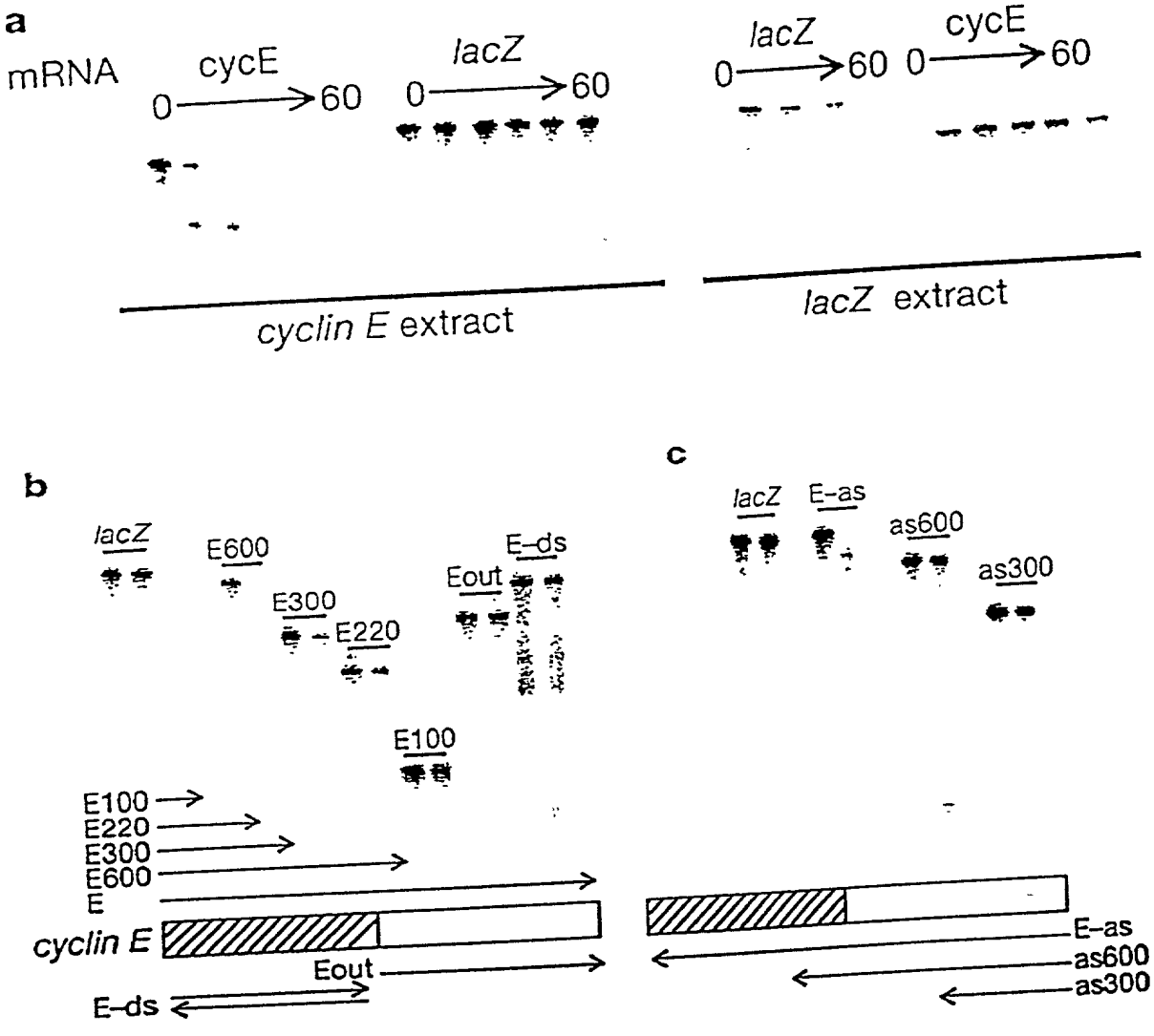

a
mRNA
cycE
0
60
lacZ
0
60
lacZ
0
60
cycE
0
60
cyclin E extract
lacZ extract
b
lacZ
E600
E300
E220
E100
E-ds
Eout
E100
E220
E300
E600
E
cyclin E
Eout
E-ds
c
lacZ
E-as
as600
as300
E-as
as600
as300

Figure 3

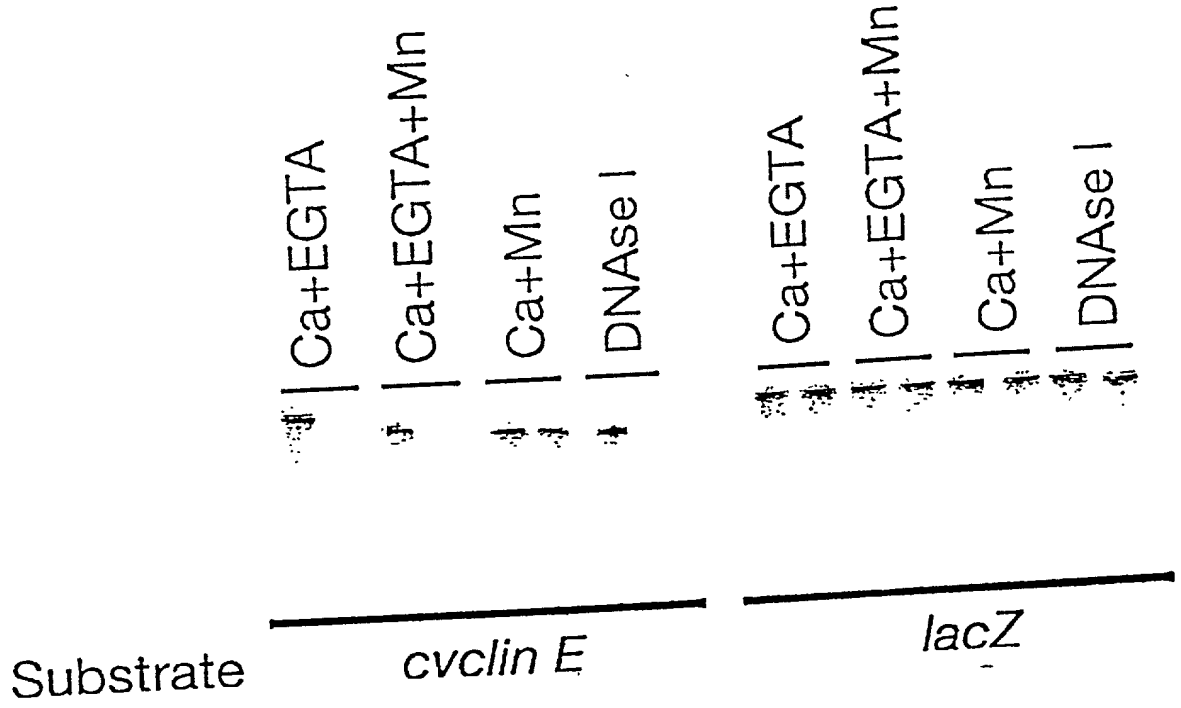

Ca+EGTA
Ca+EGTA+Mn
Ca+Mn
DNAse I
Ca+EGTA
Ca+EGTA+Mn
Ca+Mn
DNAse I
Substrate
cyclin E
lacZ

Figure 4

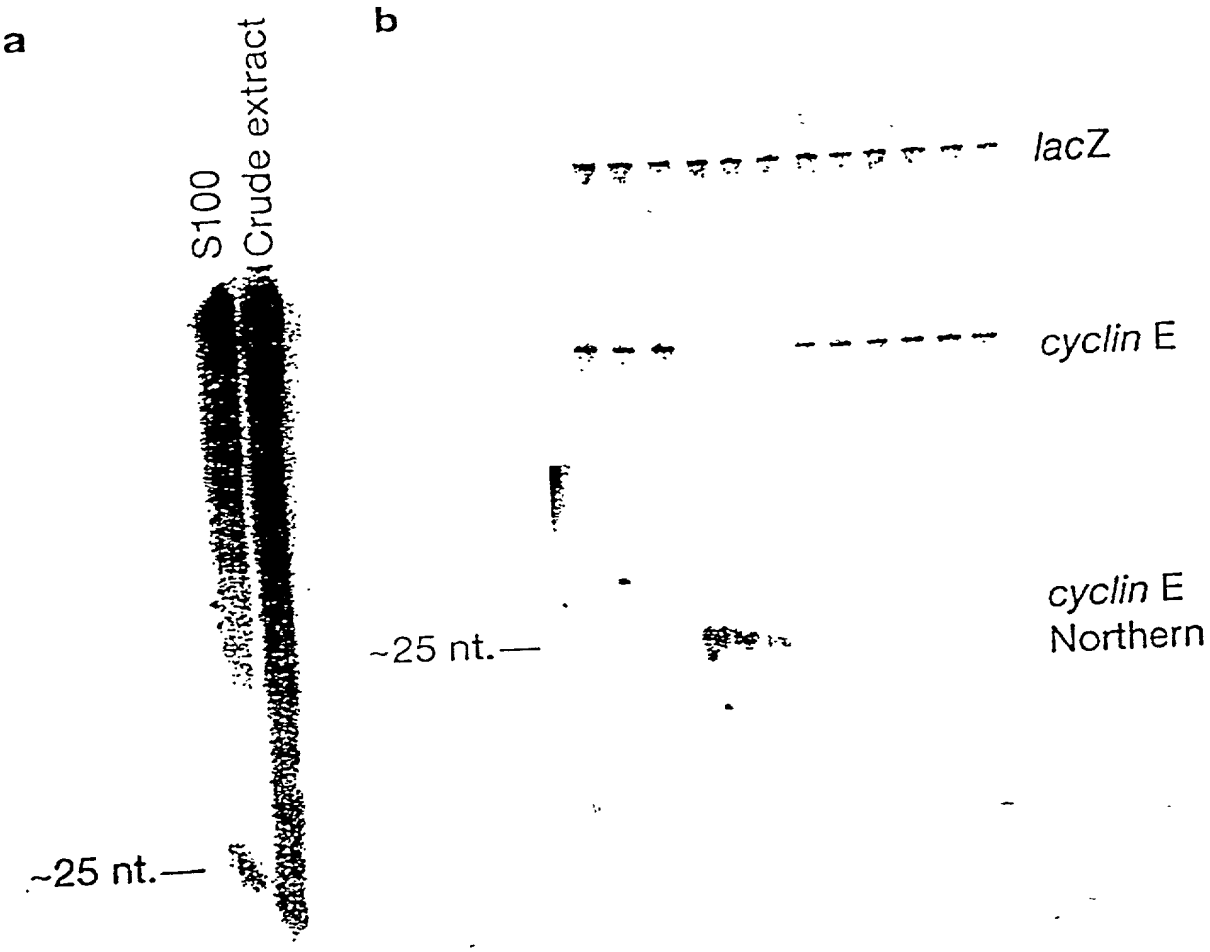

a
S100
Crude extract
~25 nt.—
b
lacZ
cyclin E
~25 nt.—
cyclin E
Northern

Figure 5

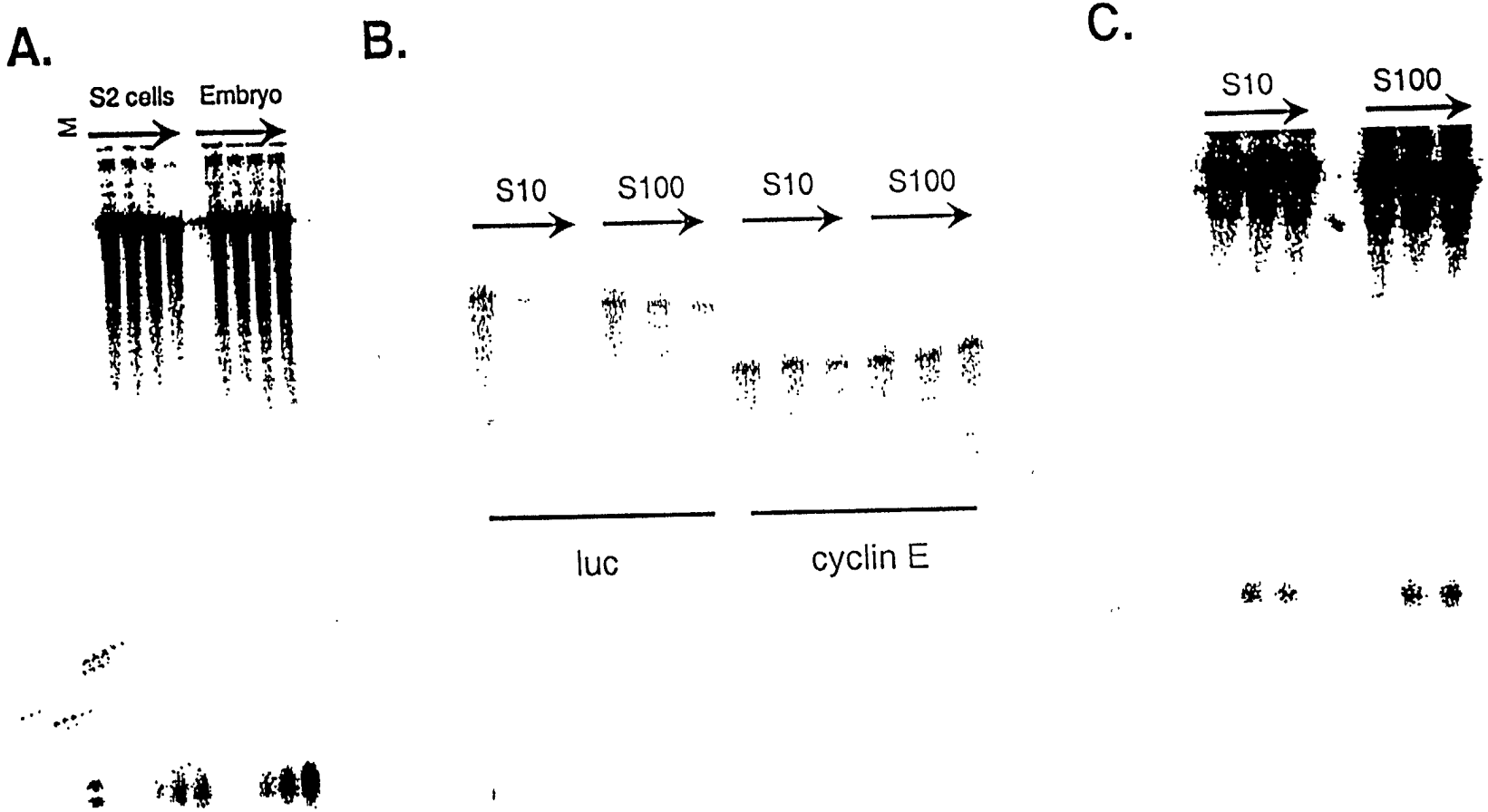
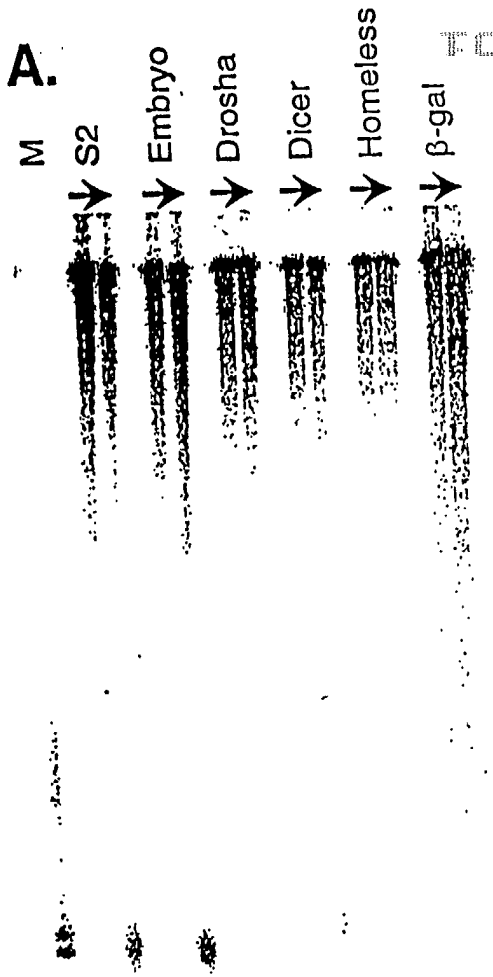
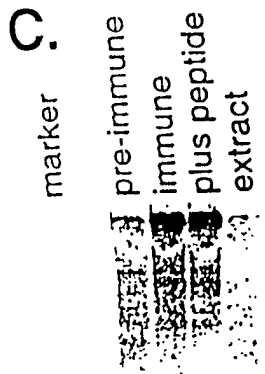
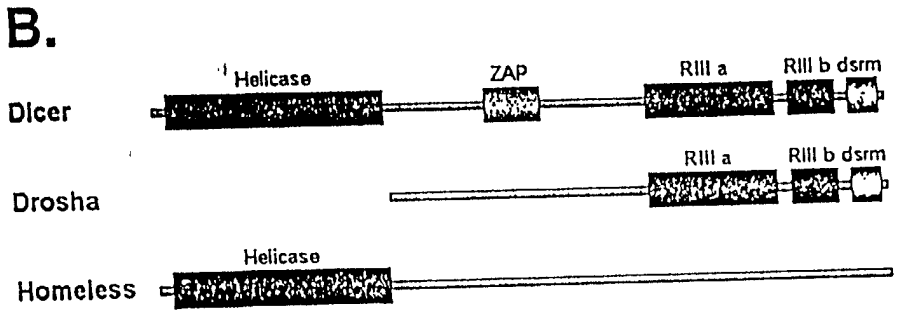
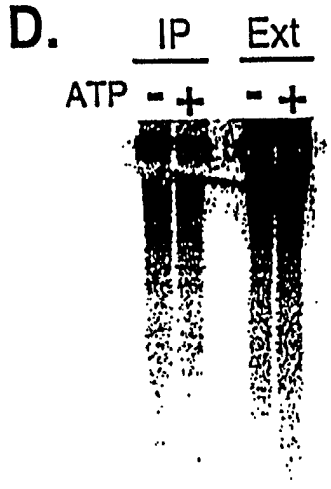


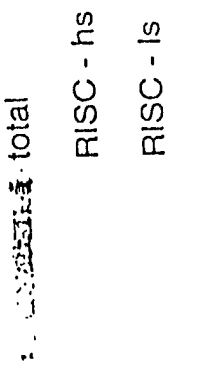
Figure 6a-c











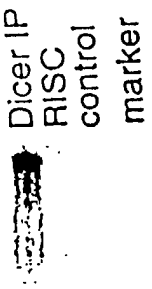


Figure 6d-f

Figure 7

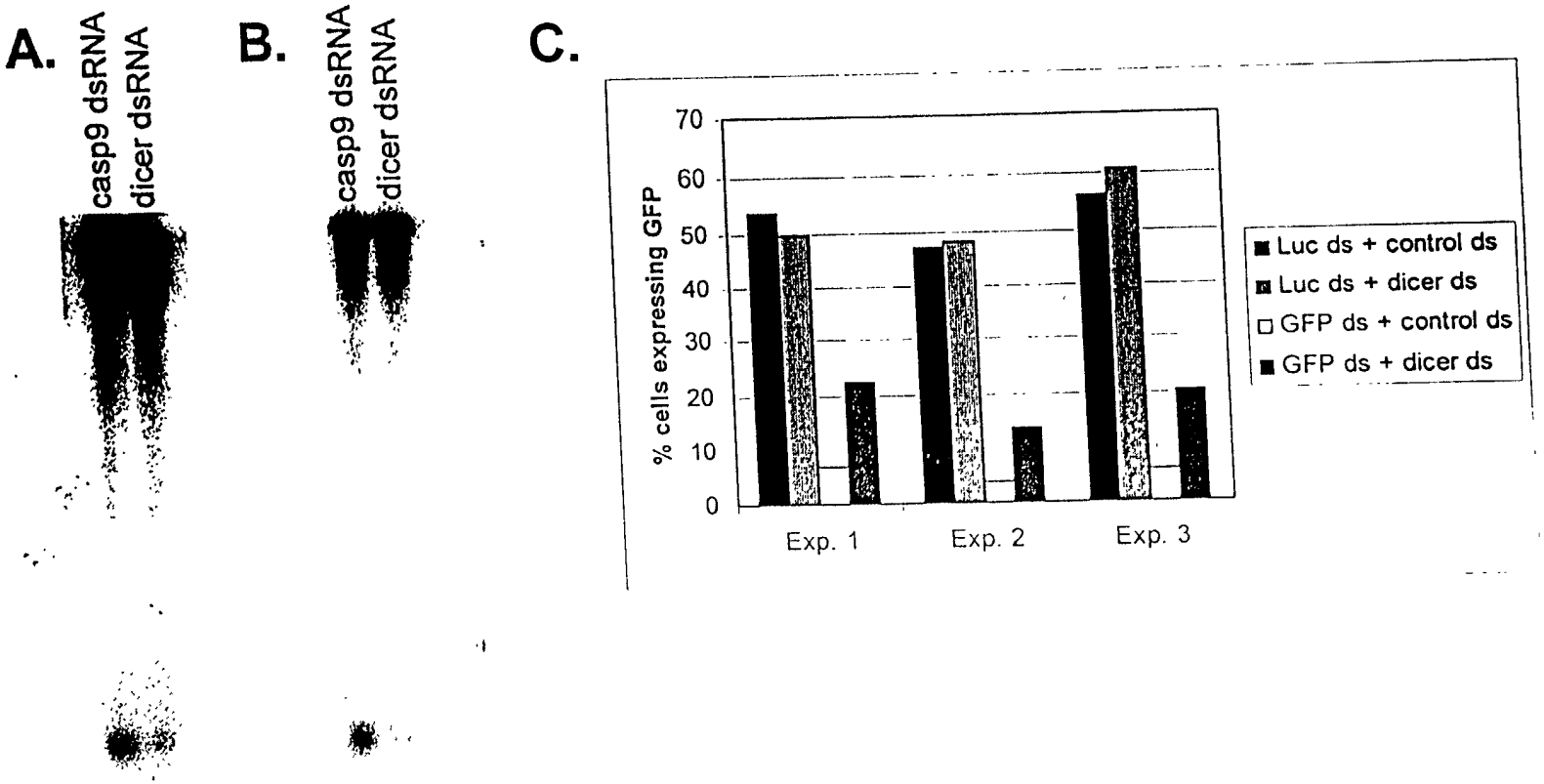
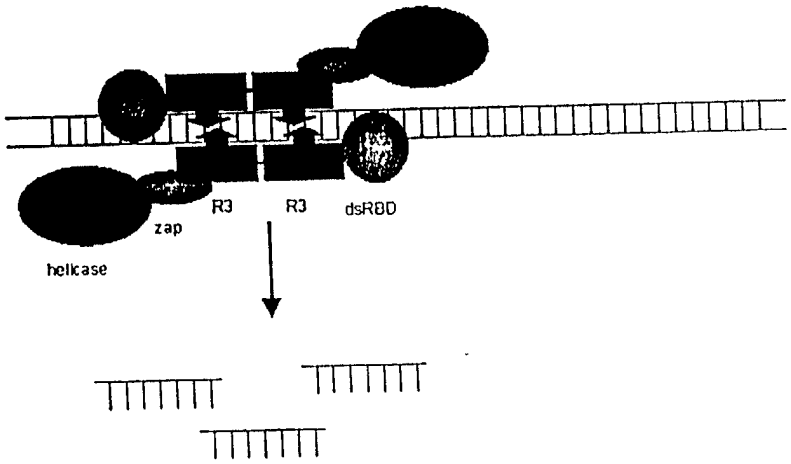

A.
casp9 dsRNA
dicer dsRNA
B.
casp9 dsRNA
dicer dsRNA
C.
% cells expressing GFP
70
60
50
40
30
20
10
0
Exp. 1
Exp. 2
Exp. 3
Luc ds + control ds
Luc ds + dicer ds
GFP ds + control ds
GFP ds + dicer ds

Figure 8A, B

A



B

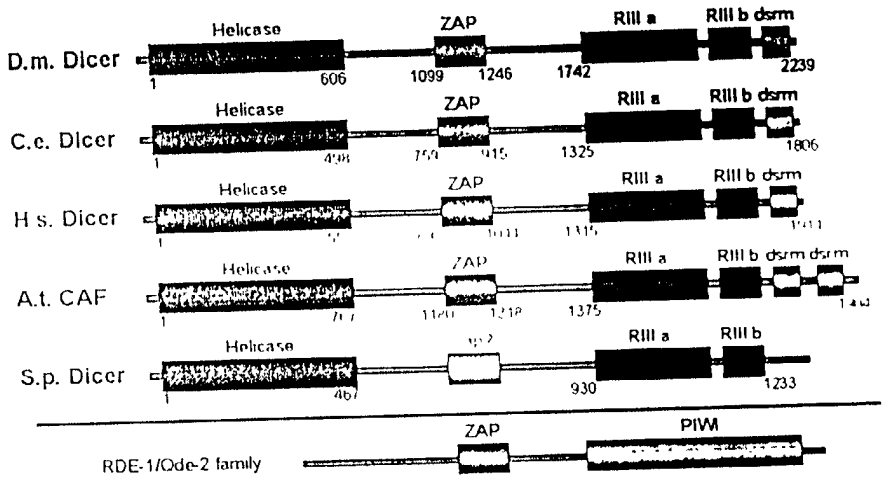


Figure 9

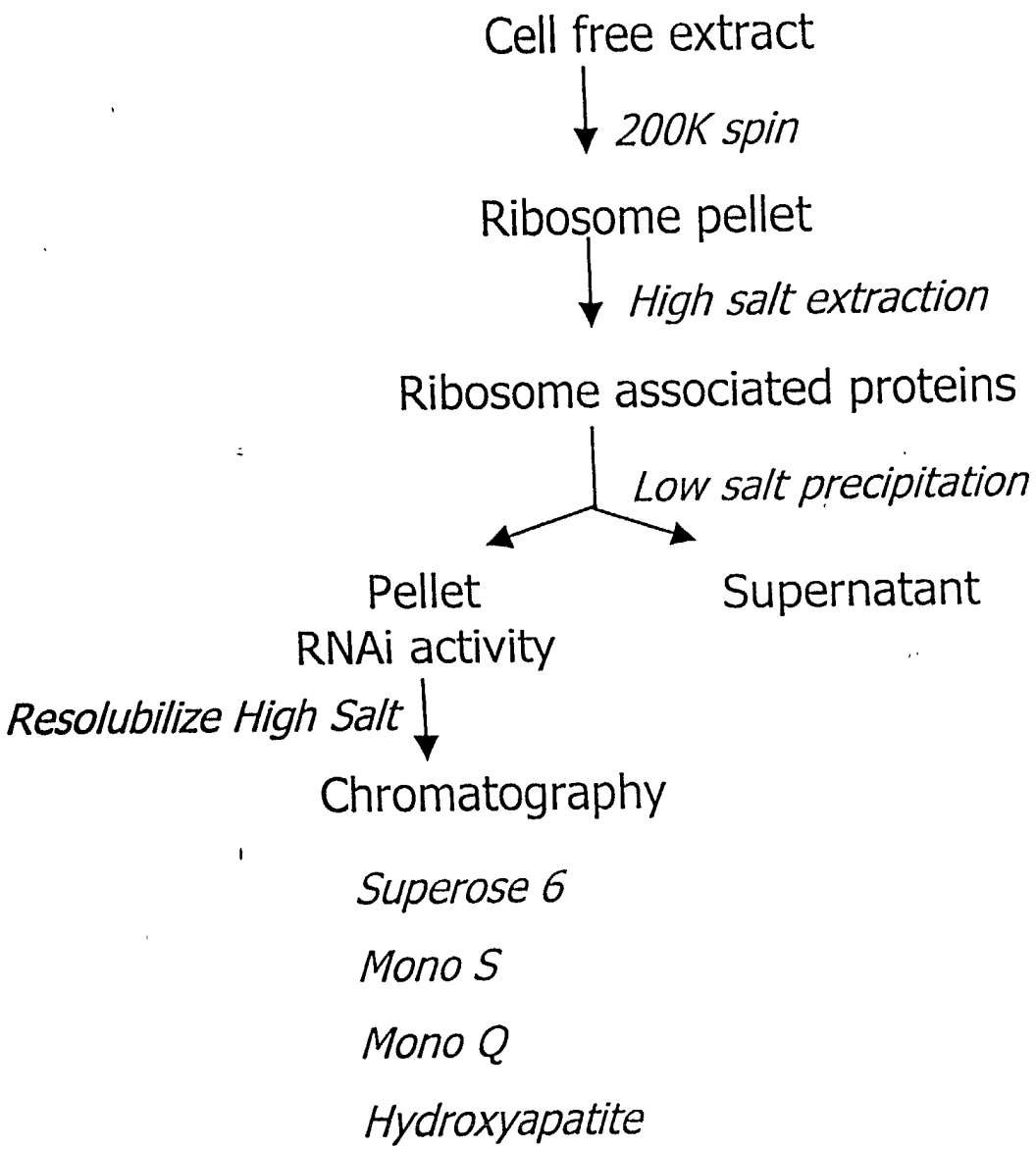


Figure 10

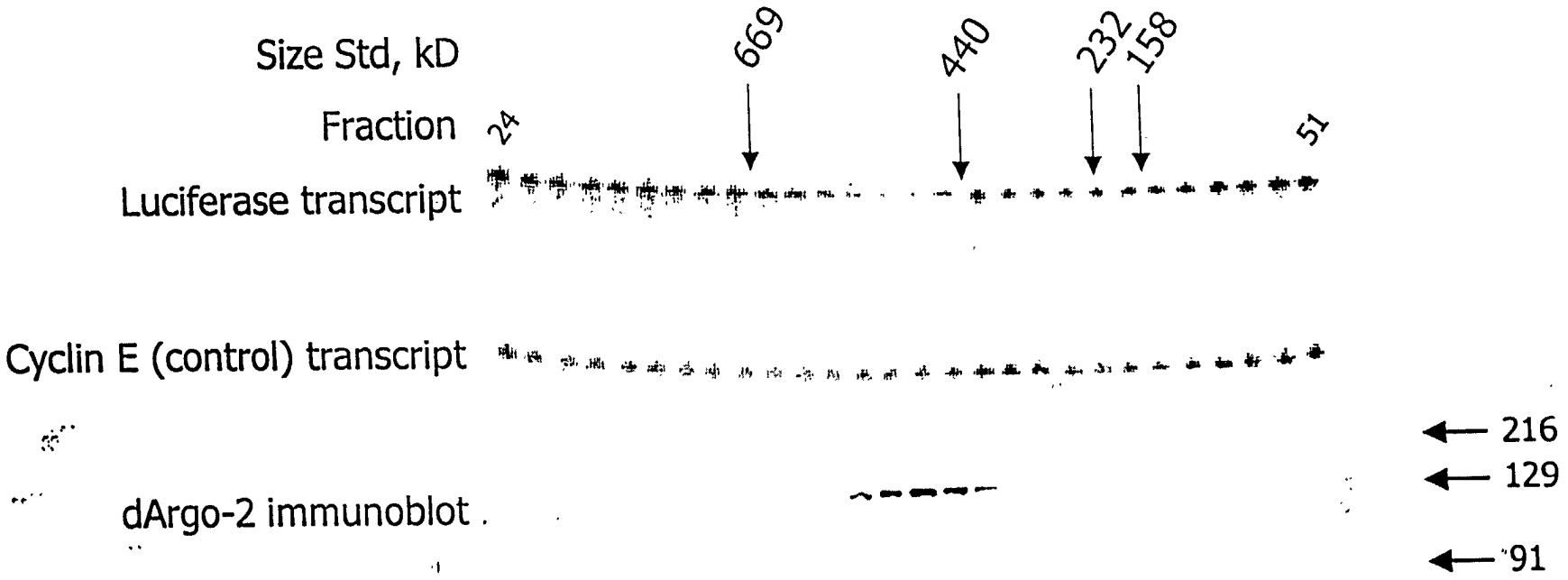


Figure 11

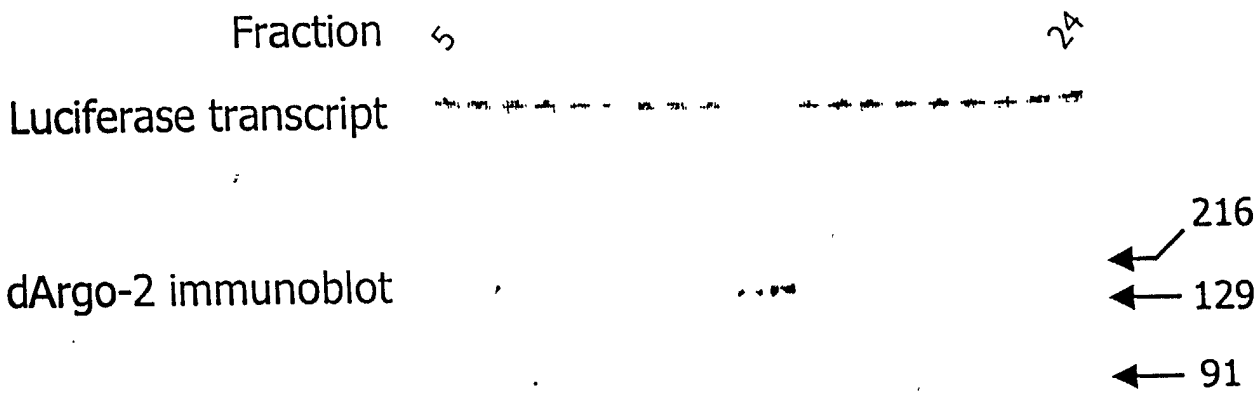


Figure 12

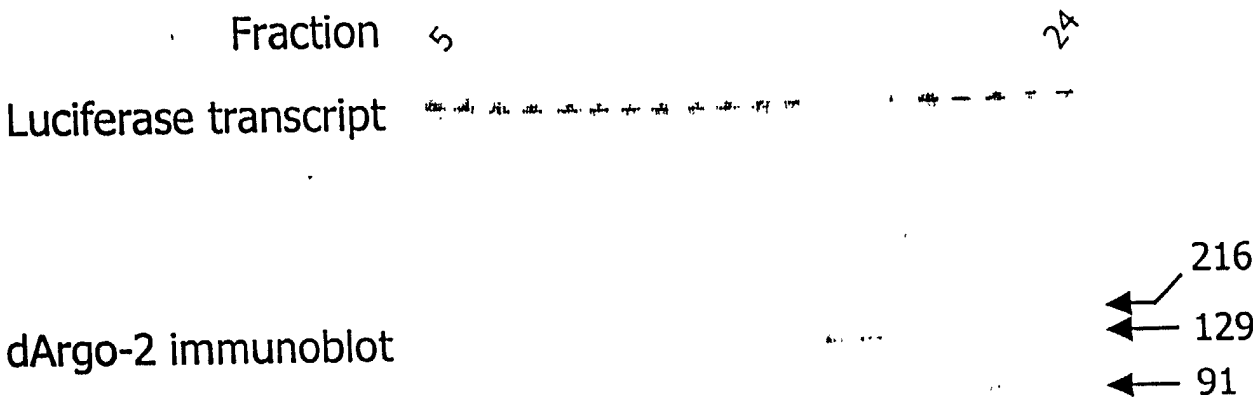

Fraction
5
24
Luciferase transcript
dArgo-2 immunoblot
216
129
91

Figure 13

Fraction 8 … 27

Luciferase transcript

dArgo-2 immunoblot

Figure 14

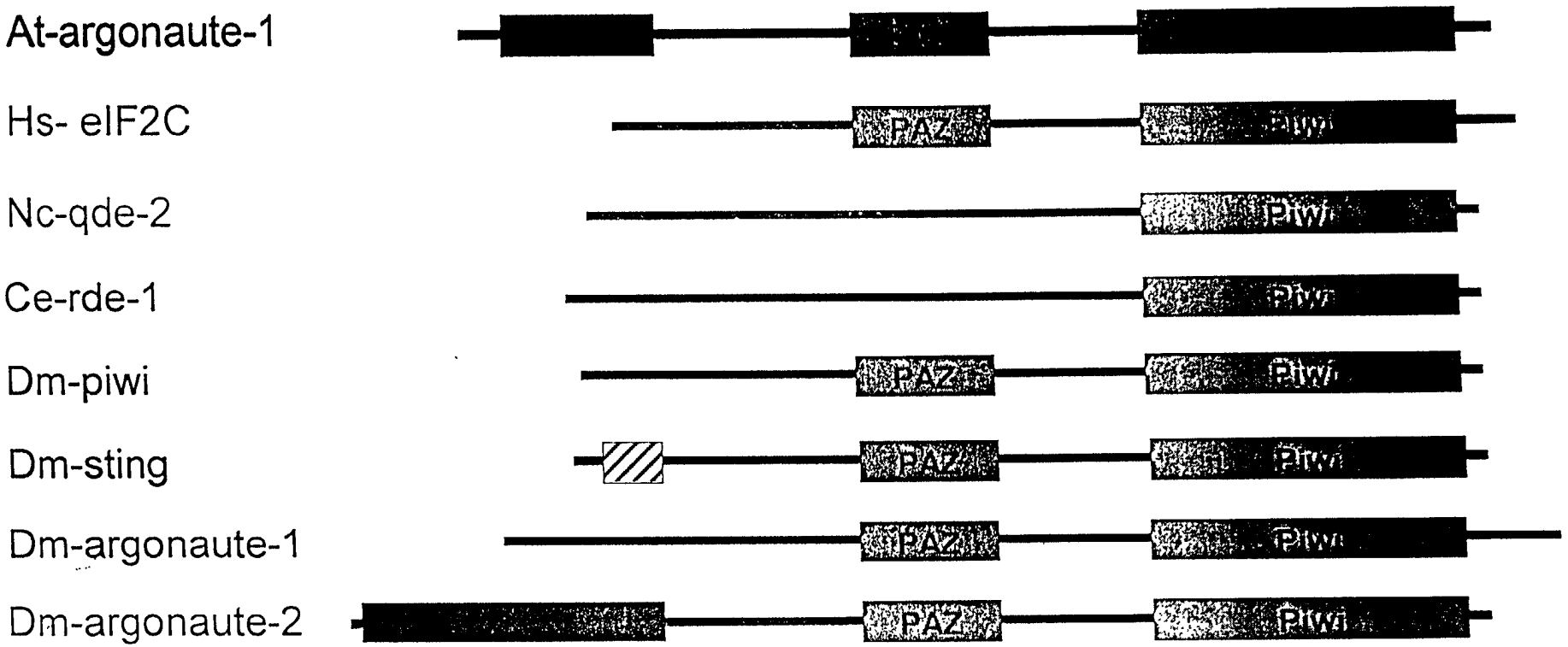


Figure 15

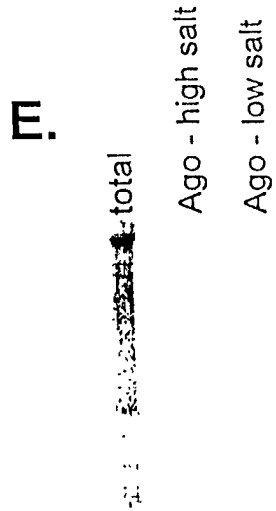


Figure 16

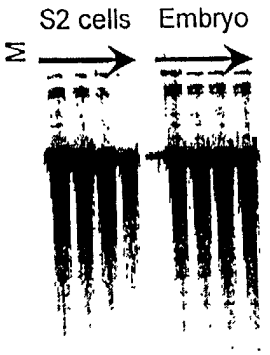
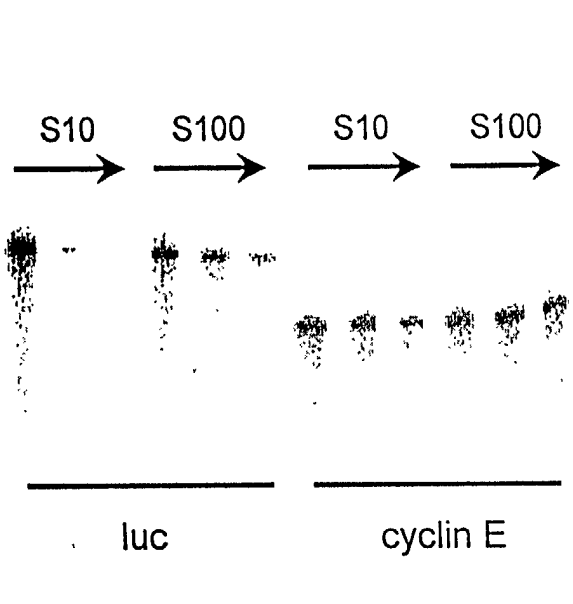


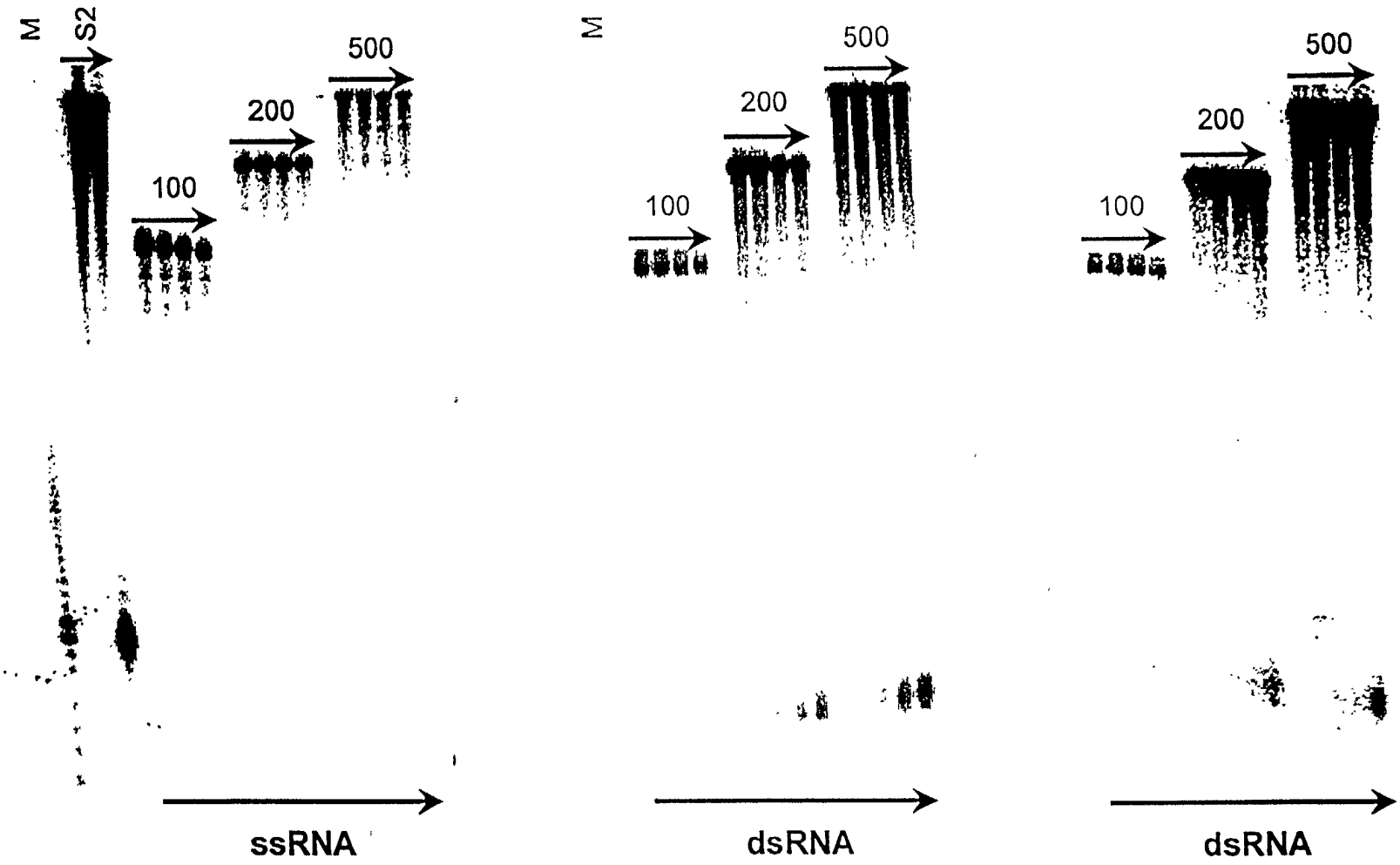
Figure 17



mRNA degradation

dsRNA processing

Figure 18



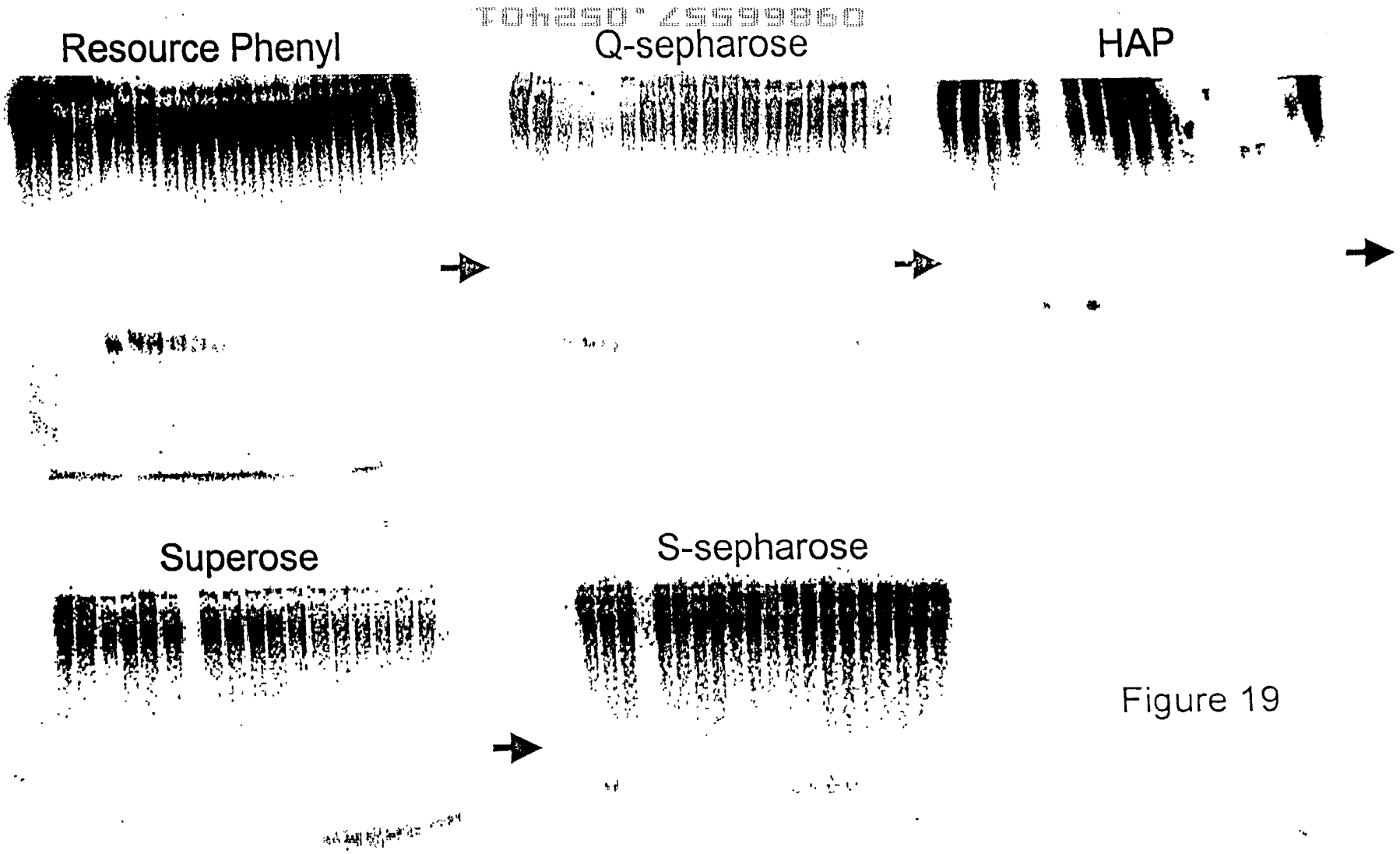


Figure 19

Purification of the 22-mer generating enzyme

Figure 20

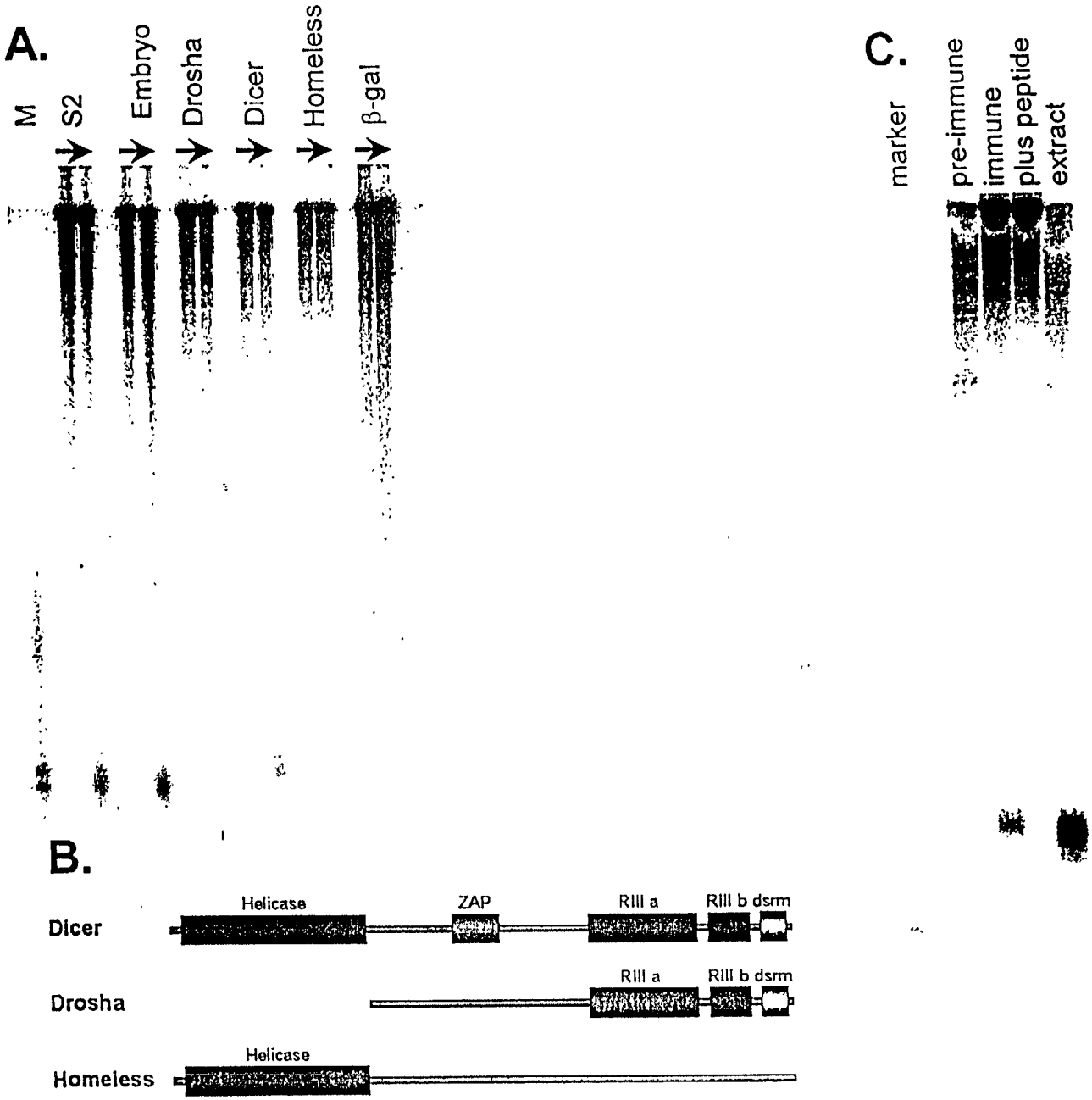


Figure 21

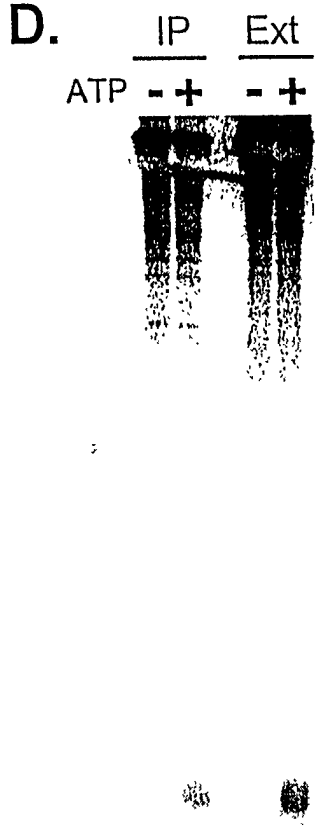


Figure 22

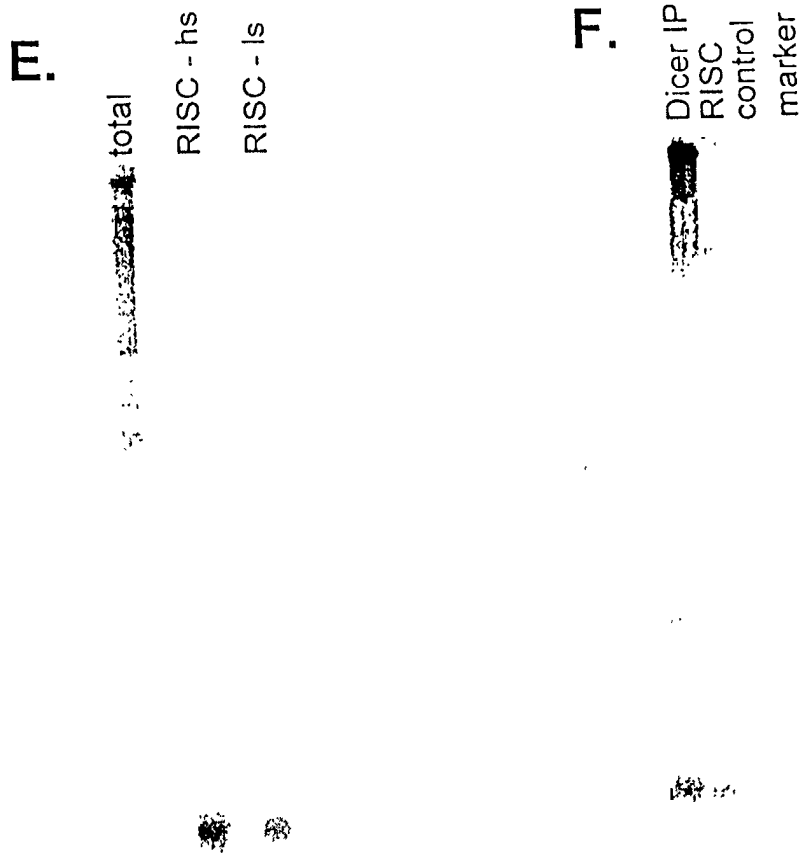


Figure 23

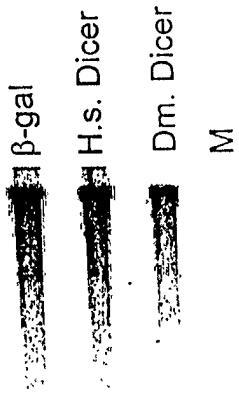
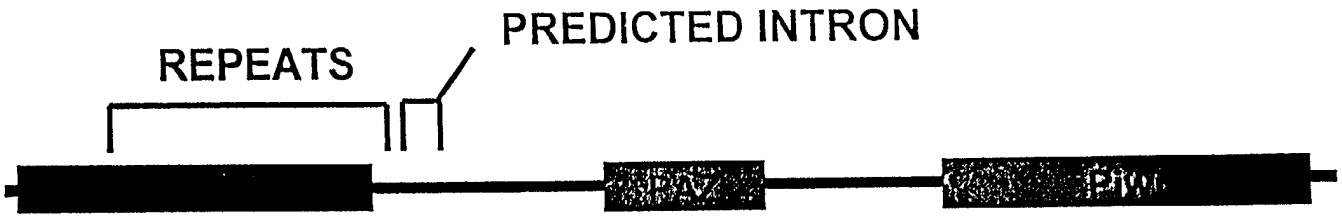
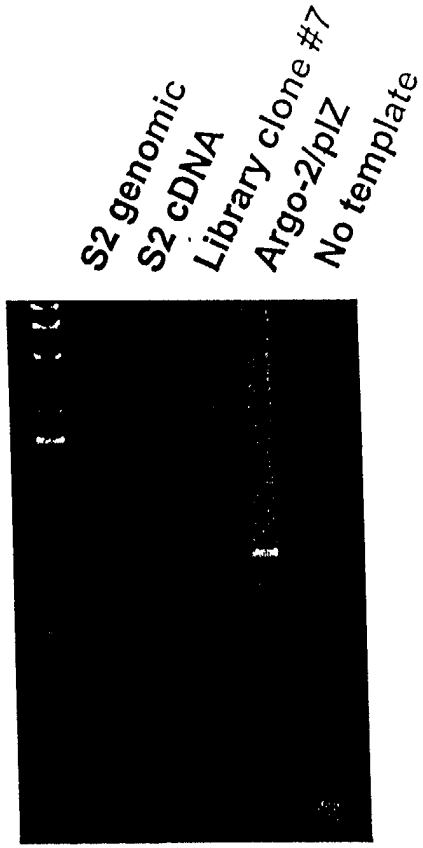


Figure 24

MGKKDKNKKGGQDSAAAPQPQQQQKQQQQRQQQPQQLQQPQQLQQPQQLQQPQQQQQQ
QPHQQQQQSSRQQPSTSSGGSRASGFQQQGQQQKSQDAEGWTAQKKQGKQQVQGWTKQ
GQQGGHQQGRQGQDGGYQQRPPGQQQGGHQQGRQGQEGGYQQRPPGQQQGGHQQGRQG
QEGGYQQRPSGQQQGGHQQGRQGQEGGYQQRPPGQQQGGHQQGRQGQEGGYQQRPSGQ
QQGGHQQGRQGQEGGYQQRPSGQQQGGHQQGRQGQEGGYQQRPSGQQQGGHQQGRQGQ
EGGYQQRPPGQQPNQTQSQGQYQSRGPPQQQQAAPLPLPPQPAGSIKRGTIGKPGQVG
INYLDLDLSKMPSVAYHYDVKIMPERPKKFYRQAFEQFRVDQLGGAVLAYDGKASCYS
VDKLPLNSQNPEVTVTDRNGRTLRYTIEIK**ETGDSTIDLK**SLTTYMNDR**IFDKPMR**AM
QCVEVVLASPCHNKAIRVGR**SFFK**MSDPNNRHELDDGYEALVGLYQAFMLGDRPFLNV
DISHKSFPISMPMIEYLERFSLKAK**INNTTNLDYSR**RFLEPFLRGINVVYTPPQSFQS
APRVYRVNGLSR**APASSETFEHDGK**KVTIASYFHSRNYPLKFPQLHCLNVGSSIKSIL
LPIELCSIEEGQALNRKDGATQVANMIKYAATSTNVRKRKIMNLLQYFQHNLDPTISR
FGIRIANDFIVVSTRVLSPPQVEYHSKRFTMVKNGSWRMDGMK**FLEPKPK**AHKCAVLY
CDPRSGRKMNYTQLNDFGNLIISQGKAVNISLDSDVTYRPFTDDERSLDTIFADLKRS
QHDLAIVIIPQFRISYDTIKQKAELQHGILTQCIKQFTVERKCNNQTIGNILLKINSK
LNGINHKIKDDPRLPMMKNTMYIGADVTHPSPDQREIPSVVGVAASHDPYGASYNMQY
RLQRGALEEIEDMFSITLEHLRVYKEYRNAYPDHIIYYRDGVSDGQFPKIKNEELRCI
KQACDKVGCKPKICCVIVVKRHHTRFFPSGDVTTSNKFNNVDPGTVVDRTIVHPNEMQ
FFMVSHQAIQGTAKPTRYNVIENTGNLDIDLLQQLTYNLCHMFPRCNRSVSYPAPAYL
AHLVAARGR**VYLTGTNR**FLDLKKEYAKRTIVPEFMKKNPMYFV

Figure 25


REPEATS
PREDICTED INTRON
PAZ
PIWI


S2 genomic
S2 cDNA
Library clone #7
Argo-2/plZ
No template

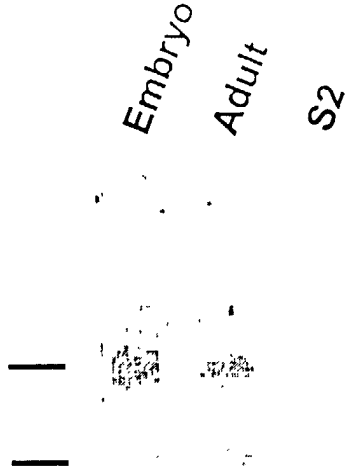

Embryo
Adult
S2

Figure 26

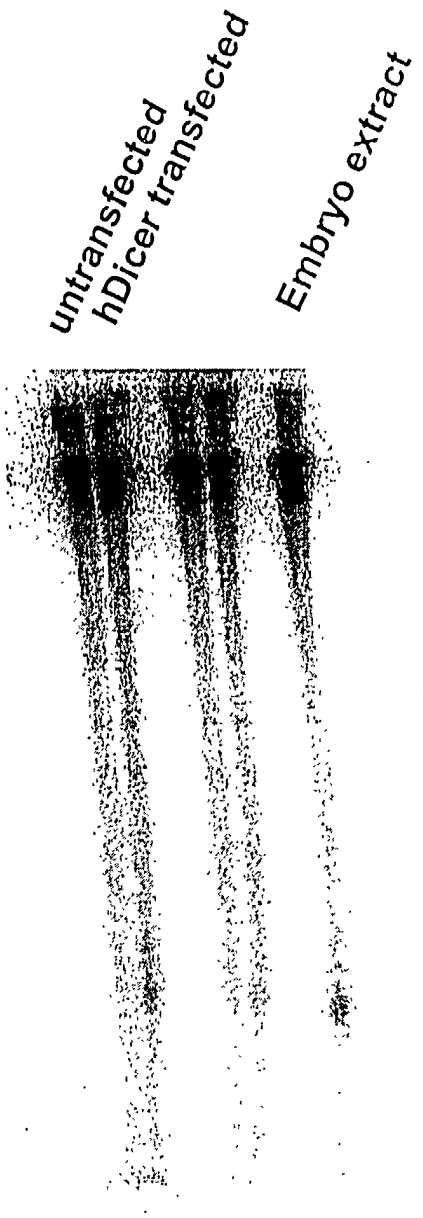
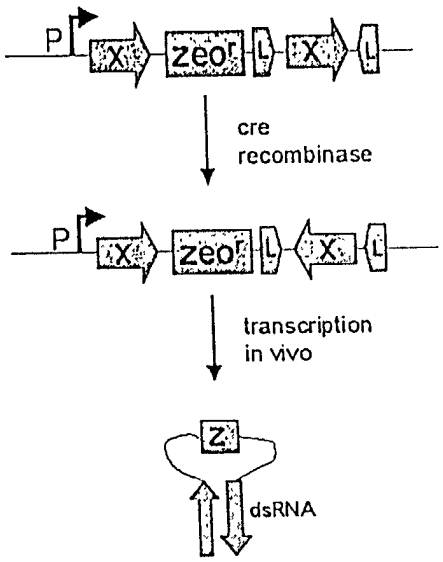


Figure 27


P
X
zeor
L
X
L
cre
recombinase
P
X
zeor
L
X
L
transcription
in vivo
Z
dsRNA

Dual luciferase assay 21hrs post-transfection (.4ug dsRNA)

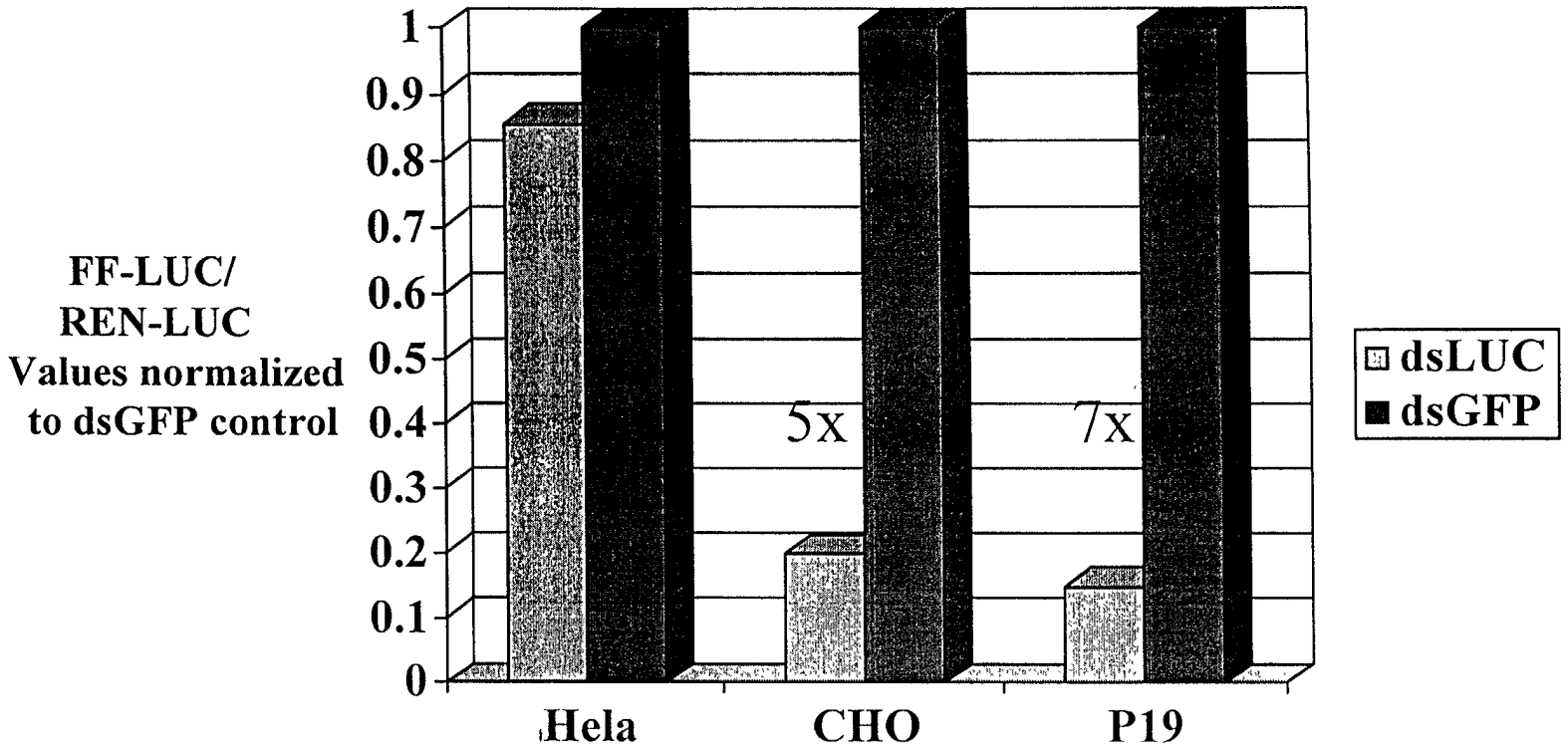


Figure 28

Dual luciferase assay with P19 cells (.5ug dsRNA)

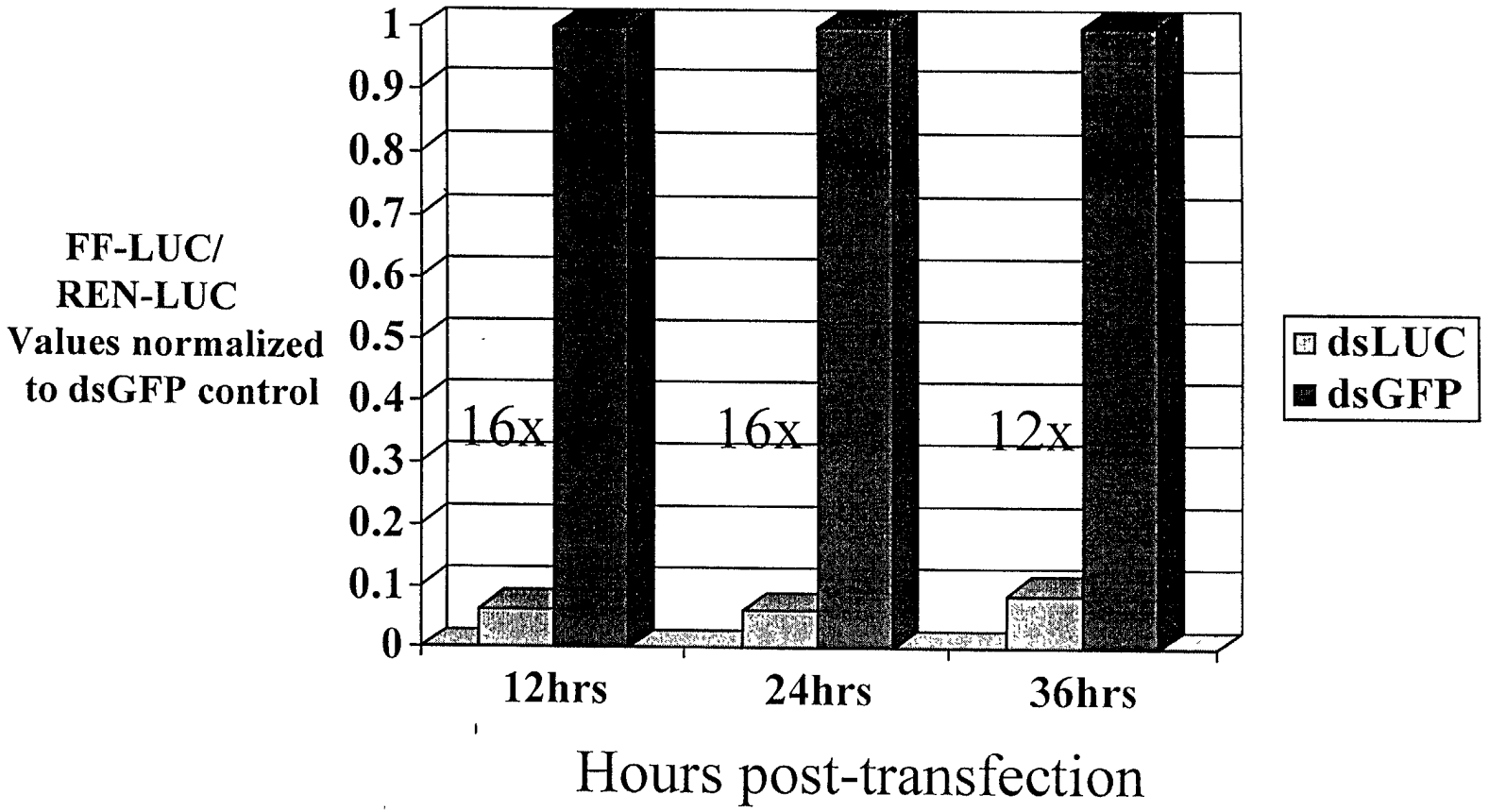


Figure 29

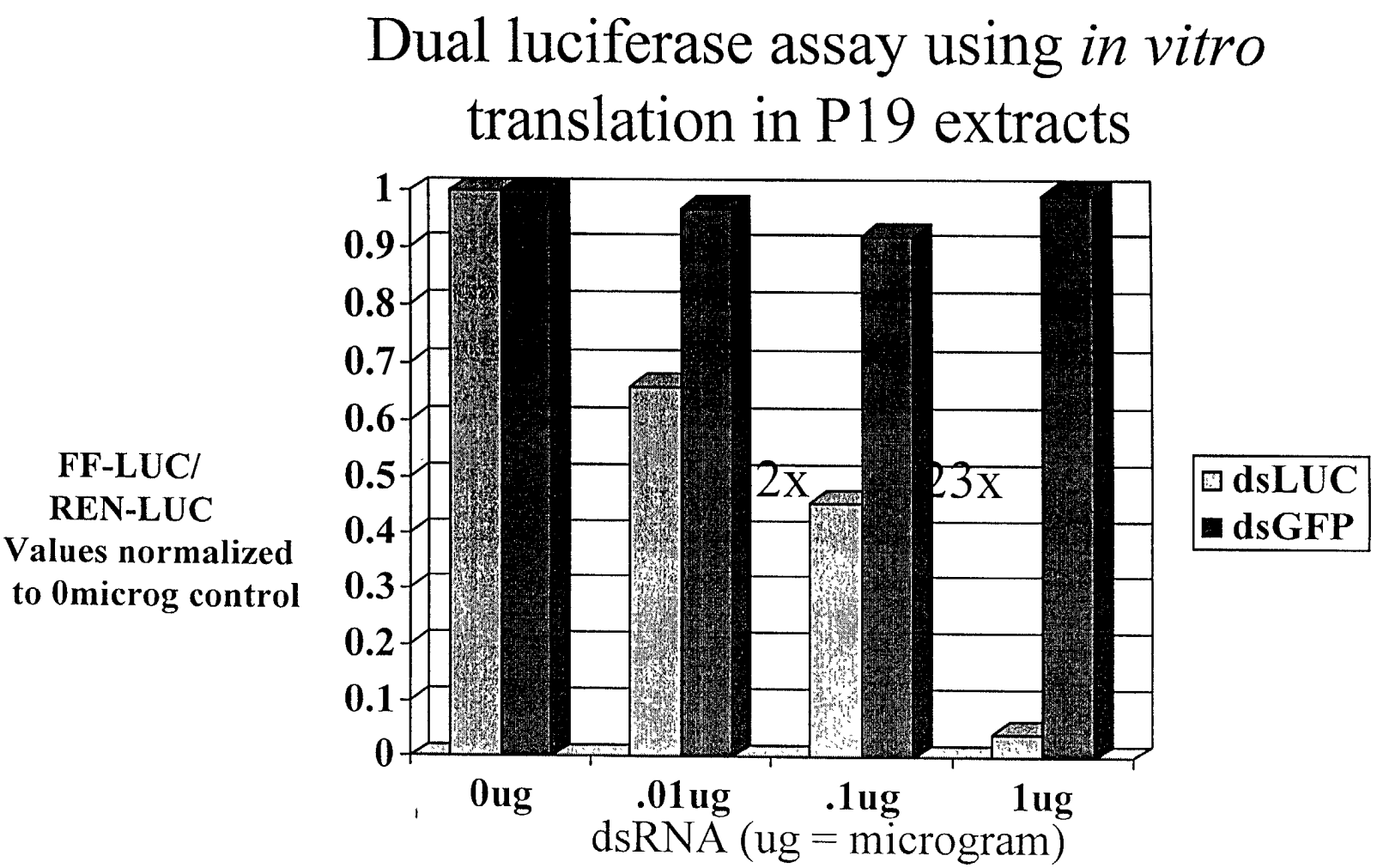

Dual luciferase assay using *in vitro* translation in P19 extracts
FF-LUC/
REN-LUC
Values normalized
to 0microg control
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
2x
23x
dsLUC
dsGFP
0ug
.01ug
.1ug
1ug
dsRNA (ug = microgram)

Figure 30

Suppression of luciferase activity is dsRNA-specific for *in vitro* translation assay

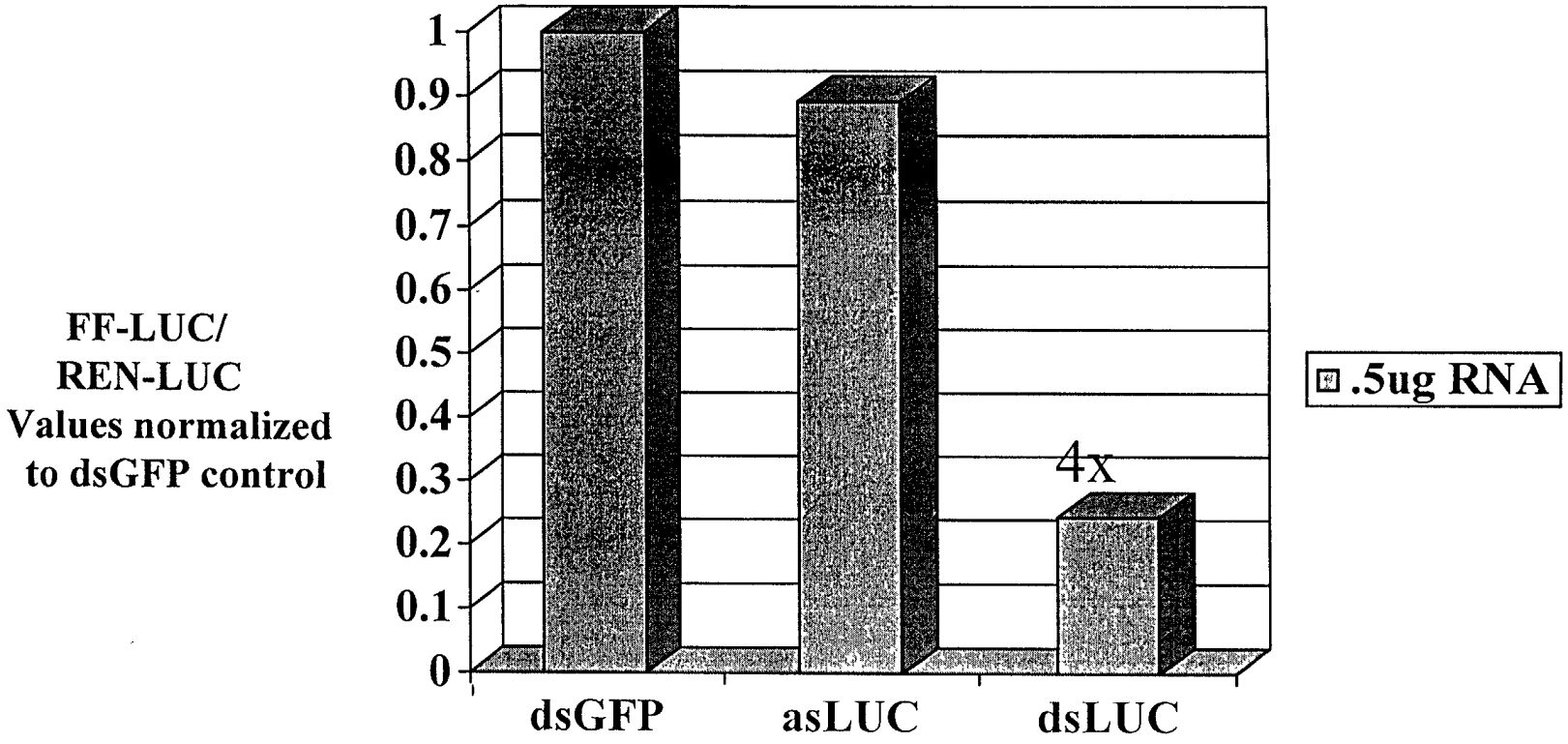


Figure 31

P19 cells soaked with various amounts of dsRNA for 12hrs in 2mL growth medium (alpha MEM, 10% FBS)

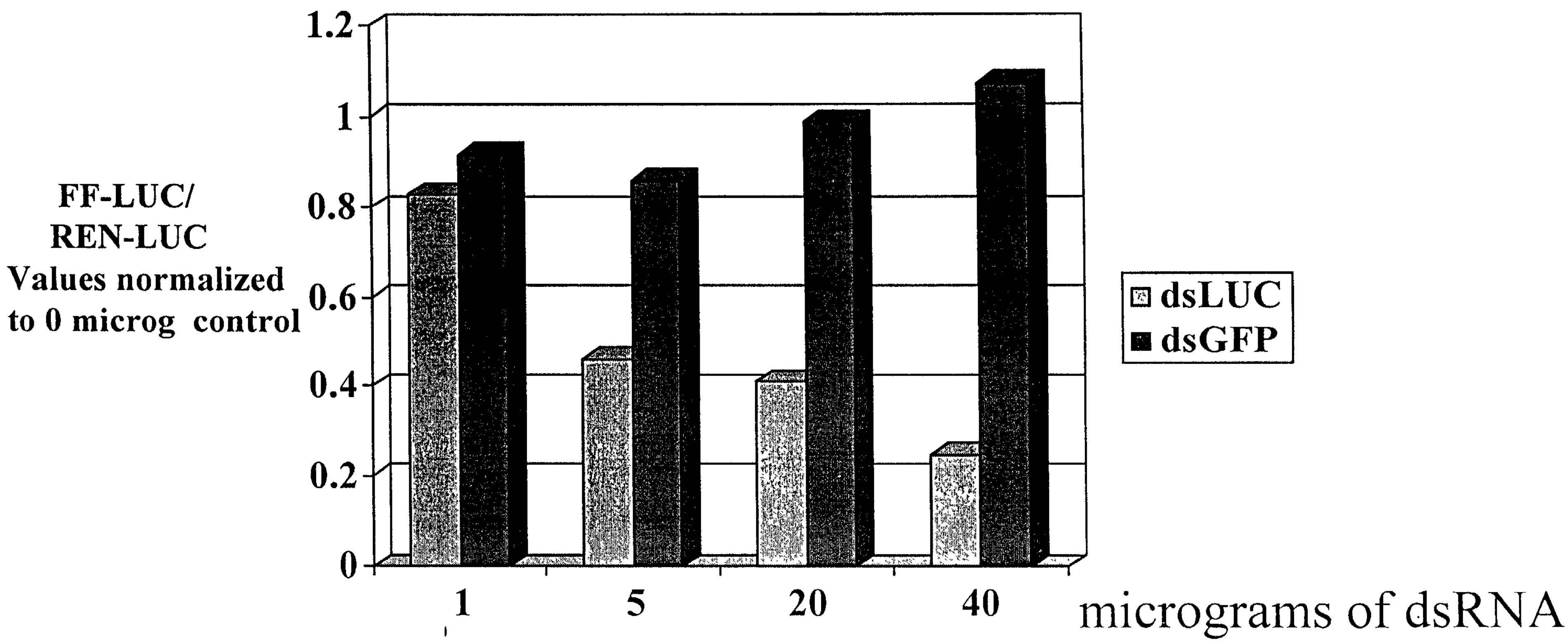


Figure 32

Figure 33